UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,116	04/04/2006	Kenneth W. Junk	06005/561655	2869

45372 7590 04/14/2009

MARSHALL, GERSTEIN & BORUN LLP (FISHER)
233 SOUTH WACKER DRIVE
6300 SEARS TOWER
CHICAGO, IL 60606

EXAMINER	
BAHTA, KIDEST	
ART UNIT	PAPER NUMBER
2123	

MAIL DATE	DELIVERY MODE
04/14/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,116	JUNK ET AL.	
	Examiner	Art Unit	
	KIDEST BAHTA	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21-34, 38-427* is/are allowed.

6)☒ Claim(s) *1-20, 35-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12, 14-15 and 18-20 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boger et al. (US 6,453,261) in view of Rodems et al. (US 4,805,126).

***Regarding claims* 1, 7 and 14, Roger discloses,**

1. A method for controlling a process parameter of a control loop comprising: providing a reference control signal at an input to a control loop (column 3, lines 29-32);; and operating the user interface to remotely manipulate the ratio of lead-to-lag of the lead-lag filter to produce an alteration in the process parameter to be controlled (column 24, lines 61-67; column 28, lines 59-67).

7. A system for tuning a process parameter of a control loop comprising: a controller applying a reference control signal to an input of the lead-lag input filter (Fig. 1, column 5, lines 40-45); a user interface in operable communication with the lead-lag filter (Fig. 10a and 10b), said user interface including at least one adjustable interface control, (Fig. 4-6, column 24, lines 61-67; column 28, lines 59-67).

14. A system for tuning the response of a control valve comprising: a control loop including a valve controller (column 2, lines 29-32), a current-to-pressure transducer, a control valve (column 4, lines 37-39), and a valve actuator in operable communication with a valve plug of the control valve (column 5, lines 40-45); a lead-lag filter in communication with an input to the control loop and a process controller supplying a reference control signal to an input of the lead-lag filter (Fig. 1).

Roger fails to disclose lead-lag filter in communication with the control signal; providing a user interface in operable communication with the lead-lag filter.

Rodems discloses said user interface facilitating remote manipulation of a ratio of lead-to-lag produced by the lead-lag filter (column 8, lines 11-21, Fig. 11 and Fig. 13), wherein adjustment of each of said at least one adjustable interface controls alters at least one tuning coefficient associated with the lead-lag filter (Fig. 3, Fig, 11 and Fig. 13i.e., Because two frequency characteristics are of importance in a lead-lag filter network the lead-lag filter network 12 advantageously has associated therewith a first frequency adjustment means 43 to adjust a fist frequency characteristic of the lead-lag filter network 12. Additionally, a ratio select means 44 is provided. Ratio select means 44 adjusts the ratio of a second lead-lag frequency characteristic to the first lead-lag frequency characteristic which has been set by adjustment means 43), a lead-lag filter in communication with the control signal (Fig. 2 and 3); providing a user interface in operable communication with the lead-lag filter (Fig. 13; column 7, lines 50-67; column 8, lines 1-7), and prior to amplification or an unamplified of the reference control signal to an input of the lead-lag input filter (column 3, lines 60-67, column 4, lines 1-10, i.e.,

Output amplifier means 16 includes a course gain adjustment 50 and a fine gain adjustment 52, as shown in FIG. 2. By providing a gain adjustment at the input amplifier network 2 and the output amplifier network 16, the system of the present invention allows for the adjustment of the gain of an input signal, input at system input 54, before the signal is passed through the filter networks).

It would have been obvious to a person of ordinary skill in the art at the time of invention was made to modify the teachings of Roger with the teachings of Rodems in order to obtain optimum response in a closed feedback loop and for providing a reading of the nature of the compensator employed.

***Regarding claims* 2-6, 8-12, 16-15 and 18-20, Roger discloses,**

2. The method of claim 1, wherein operating the user interface includes adjusting at least one tuning coefficient associated with the lead-lag filter by manipulating at least one virtual interface control provided on a display associated with the user interface (Fig. 11; fig. 12; column 22, lines 50-65).

3. The method of claim 2, and displaying data associated with the process parameter to be controlled (Figs.10a, 10b, 27-28).

4. The method of claim 3, wherein the data is displayed on the display associated with the user interface (Figs.10a, 10b, 27-28).

5. The method of claim 1, and manipulating a virtual ratio of lead-to-lag to generate a predicted response of the process parameter to be controlled, and displaying the predicted response on a display associated with the user interface (Figs. 4-6; Figs.10a, 10b, 27-28;).

6. The method of claim 1, wherein the reference control signal is a 4-20 mA control signal (column 10, lines 29-46).

8. The system of claim 7, wherein the user interface further includes a display for monitoring a process parameter affected by alteration of the at least one tuning coefficient ((Fig. 11; fig. 12; column 22, lines 50-65)..

9. The system of claim 8, wherein the control loop includes at least one feedback signal that varies with changes in the process parameter (column 10, lines 35-45).

10. The system of claim 8, wherein the user interface includes a display on which variations in the at least one feedback signal are graphically displayed (Fig. 2, 3, Fig. 27).

11. The system of claim 7, wherein the user interface further includes a display for a monitoring a predicted response of the process parameter in response to adjustments of each of the at least one adjustable interface controls (Fig. 10a and 10b).

12. The system of claim 11, wherein the user interface is provided with at least one control mechanism to control a latency period between the predicted response of the process parameter to adjustments of each of the at least one adjustable interface controls, and application of the adjustments of each of the at least one adjustable interface controls to the lead-lag filter to effect an actual response of the process parameter (Fig. 18, column 8, lines 26-62).

15. The system of claim 14, further comprising a user interface in operable communication with the lead-lag filter, said user interface including at least one adjustable interface control, wherein adjustment of each of said at least one adjustable interface controls alters at least one tuning coefficient associated with the lead-lag filter (Figs. 10a, 10b, 27 and 28).

18. The system of claim 15, wherein the user interface further includes a display for a monitoring a predicted response of a position of the valve plug of the control valve in response to adjustments of each of the at least one adjustable interface controls (column 8, lines 42-62, abstract).

19. The system of claim 18, wherein the user interface is provided with at least one control mechanism to control a latency period between the predicted response of the position of the valve plug of the control valve to adjustments of each of the at least one adjustable interface controls (column 16, cline 40-45), and application of the adjustments of each of the at least one adjustable interface controls to the lead-lag filter to effect an actual response of the position of the valve plug of the control valve (column 10, lines 34-64).

20. The system of claim 14, wherein the lead-lag input filter is in communication with a controller, said controller including programming adapted to cause the lead-lag input filter to curtail movement of a valve stem of the control valve operatively coupled to the valve plug as the valve plug approaches at least one of a valve seat and a travel stop of the control valve (Figs. 10a, 10b, 27 and 28).

Regarding claims 35-37, see rejection claims 1-3, as state above.

2. Claims 13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boger et al. (US 6,453,261) in view of Rodems (US 4,805,126) in view of Latwesen et al. (US. 6,466,893).

Regarding claims 13 and 16-17, Boger and Rodems disclose the limitations of claims 7, 14 and 15, as state above, but Boger and Rodems fail to disclose the

limitations of claims 13, 16 and 17. However, Latwesen discloses the limitations of claims 13, 16 and 17 as follow:

13. The system of claim 7, wherein said user interface is provided in a location remote from the lead-lag input filter (column 1, lines 15-22, i.e., process control loop connected on-line within a process environment).

16. The system of claim 15, wherein the user interface is located at a remote location from the lead-lag filter (column 1, lines 15-22, i.e., process control loop connected on-line within a process environment).

17. The system of claim 15, wherein the user interface communicates with the lead-lag filter through at least one of a group of telephone lines, satellite transmission, coaxial cable, Ethernet, fiber optic cable, and the Internet (column 1, lines 15-22,column 3, lines35-40, i.e., process control loop connected on-line within a process environment).

It would have been obvious to a person of ordinary skill in the art at the time of invention was made to modify the teaching of Boger and Rodems with the teachings of Latwesen in order to provide easily measure, monitor, and control the loop process form the distance.

Allowable Subject Matter

3. Claims 21-34 and 38-42 allowed.

Response to Arguments

4. Applicant's arguments with respect to claims 1-20 and 35-37 have been considered but they are not persuasive.

Applicant argues that the prior arts, Boger and Rodems, fails to disclose the user interface facilitating remote manipulation of a ratio of lead to lag produced by the lead-lag filter. However, Examiner disagrees since Rodems discloses column 5, 35-40, 51-60, Fig. 11, Fig. 13 and column 8, lines 11-21, i.e*., The lead-lag filter network 12 has associated therewith a lead-lag filter first frequency selector and indicator 90, lead-lag filter second frequency to first frequency ratio selector and indicator 92, lead-lag filter bypass switch and bypass indicator 94. Associated with the lead-lag filter network 14 there is a lead-lag filter first frequency selector and indicator 96, lead-lag filter second frequency selector and indicator 98, lead-lag filter bypass switch and indicator 100. The output gain network includes an output gain course adjustment selector and indicator 50, output gain fine selector and indicator 52 and the signal output connection 106.*

Applicant argues that the prior arts, Boger and Rodems, fails to disclose *a lead-lag filter in communication with the control signal and providing a user interface in operable communication with such a lead-lag filter.* Examiner disagrees since Rodems discloses Fig. 1, Fig. 3, Fig. 11, Fig. 13, column 5, lines 35-40. i.e., to provide a maintenance, laboratory, and factory test tool which is portable, lightweight and

relatively small, with the ability to adjust compensation parameters for observably optimizing response to typical commands in a feedback control system and to indicate the compensation parameters used to obtain an optimized response.

Conclusion

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed Kidest Bahta whose telephone number is 571-272-3737. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval IPAIRI system. Status information for published applications may be obtained from either Private PMR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAG system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-fee).

/Kidest Bahta/

Primary Examiner, Art Unit 2123